CORRESPONDENCE.

Parasites of Birds.

To the Editors of 'The Auk':—

Dear Sirs:—An interesting note by Dr. R. W. Shufeldt in the April number of 'The Auk' suggests that other ornithologists might be interested in knowing where to find descriptions and figures of the parasites which occur upon birds. For the group of Mallophaga, which is the principal group of insects infesting birds, there is a very extensive and exhaustive monograph in French by Piaget entitled 'Les Pediculines,' which, with supplement, covers practically everything that is known regarding systematic arrangement and descriptions of these parasites as well as of the suctorial parasites of mammals up to date of publication of the supplement, about seven years ago. A few papers by the same author and by Neumann have appeared since then and the writer has given a short account of the species affecting domestic animals, also describing some American species, in Bulletin Number 7, of the Division of Entomology, United States Department of Agriculture.

Of the earlier works on these parasites those of Nitzsch and Denny are important, the latter being in English and covering the species known to occur in Great Britain. This was published in 1842 and is, of course, deficient in regard to the recently described species. Another work, the 'Epizoa,' by Geibel, in German, contains full accounts of the species known up to 1872, with colored plates for a large proportion of them, and is quite serviceable for the study of these parasites. The work by Piaget, however, is most essential.

In regard to photographing these insects it has been my experience that it is a difficult matter to get photographs which give distinct details of the minute parts, some of which are particularly necessary for the discrimination of the species, although the photographs will give a general outline and certain portions very distinctly. If the photograph is made with transmitted light certain portions, especially where the tissues are denser, will appear obscure, and most surface characters are lacking, and with reflected light it is impossible to get photographs from specimens in balsam, and if taken from unmounted specimens there is much difficulty in getting the parts all into focus so as to secure a distinct outline as well as clear details of the surface markings. These parasites can be studied very nicely with a compound microscope with powers ranging from 50 diameters to 200 diameters, and if the specimens can be examined while alive some of the structures otherwise obscure are likely to be discovered. In preserving them it is well to put a number in alcohol in small vials with note giving name of host, and if the material

is abundant, to preserve some at once by mounting in Canada balsam upon glass slides for microscopic study. Suggestions in this line have been made in a recent article in the 'American Monthly Microscopical Journal.'

Very respectfully,

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Notes on the Steganopodes, and on Fossil Birds' Eggs.

TO THE EDITORS OF 'THE AUK':—

Dear Sirs: —Through the courtesy of the United States National Museum I have been permitted to examine their entire series of skeletons representing all the North American representatives of the Steganopodes. This material I have also compared with osteological preparations of steganopodous birds in my own collection, and with those from other parts of the world. My comparative studies of this remarkably fine series convinces me that this group, in so far as their skeletology seems to indicate, may be arrayed as a fairly natural SUBORDER of birds, for which the name STEGANOPODES may be retained. Upon again dividing them they would appear to fall into at least three superfamilies, and an entire taxonomical scheme, to include so far as the genera only, would stand as follows:—

SUBORDER.	SUPERFAMILIES.	FAMILIES.	GENERA.
STEGANOPODES	Pelecanoidea	Pelecanidæ.	*Pelecanus.*
		Phalacrocoracidæ.	*Phalacrocorax.*
		Anhingidæ.	*Anhinga.*
		Sulidæ.	*Sula.*
	Phaëthontoidea	Phaëthontidæ.	*Phaëthon.*
	Fregatoidea.	Fregatidæ.	*Fregata.*

In the 'Proceedings' of the Zoölogical Society of London for this year (1894, p. 160) I published a brief article 'On the Affinites of the Steganopodes,' wherein there was set forth a classificatory scheme for this group, but unfortunately it contained an error that made it appear that the genera *Pelecanus*, *Phalacrocorax*, *Anhinga*, and *Sula* all belonged to the family *Pelecanidæ*, which of course is a proposition that would not be entertained for a moment by any thinking avian taxonomer. There are no better defined families anywhere in ornithology than the Pelicans, the Comorants, the Anhingas, and the Gannets. Of the Pelecanoidea, the two most closely related families are the Phalacrocoracidæ and the Anhingidæ, while the next most evident fact is the less close affinity existing between the Comorants and the Sulidæ. *Pelecanus* is an aberrant genus having varying relations with all the other three remaining families of the Pelecanoidea. From this last-named superfamily we are led to the Phaëthontoidea through the Sulidæ, and especially through